

# UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Docket No.  
B588-012

Total Pages in this Submission  
3

## TO THE ASSISTANT COMMISSIONER FOR PATENTS

Box Patent Application  
Washington, D.C. 20231

Transmitted herewith for filing under 35 U.S.C. 111(a) and 37 C.F.R. 1.53(b) is a new utility patent application for an invention entitled:

**APPARATUS WHICH CAN BE CONNECTED TO NETWORK, AND CHARGING MANAGEMENT SYSTEM**

and invented by:

**Takekazu Kumagai**

If a **CONTINUATION APPLICATION**, check appropriate box and supply the requisite information:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Which is a:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: \_\_\_\_\_

Enclosed are:

### Application Elements

1. ☒ Filing fee as calculated and transmitted as described below
2. ☒ Specification having 39 pages and including the following:
  - a. ☒ Descriptive Title of the Invention
  - b. ☐ Cross References to Related Applications (if applicable)
  - c. ☐ Statement Regarding Federally-sponsored Research/Development (if applicable)
  - d. ☐ Reference to Microfiche Appendix (if applicable)
  - e. ☒ Background of the Invention
  - f. ☒ Brief Summary of the Invention
  - g. ☒ Brief Description of the Drawings (if drawings filed)
  - h. ☒ Detailed Description
  - i. ☒ Claim(s) as Classified Below
  - j. ☒ Abstract of the Disclosure

# UTILITY PATENT APPLICATION TRANSMITTAL (Large Entity)

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## Application Elements (Continued)

3. ☒ Drawing(s) (when necessary as prescribed by 35 USC 113)
- a. ☒ Formal                      Number of Sheets 9
- b. ☐ Informal                      Number of Sheets \_\_\_\_\_
4. ☒ Oath or Declaration
- a. ☒ Newly executed (original or copy)                      ☐ Unexecuted
- b. ☐ Copy from a prior application (37 CFR 1.63(d)) (for continuation/divisional application only)
- c. ☒ With Power of Attorney                      ☐ Without Power of Attorney
- d. ☐ DELETION OF INVENTOR(S)  
Signed statement attached deleting inventor(s) named in the prior application,  
see 37 C.F.R. 1.63(d)(2) and 1.33(b).
5. ☐ Incorporation By Reference (usable if Box 4b is checked)  
The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered as being part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. ☐ Computer Program in Microfiche (Appendix)
7. ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all must be included)
- a. ☐ Paper Copy
- b. ☐ Computer Readable Copy (identical to computer copy)
- c. ☐ Statement Verifying Identical Paper and Computer Readable Copy

## Accompanying Application Parts

8. ☒ Assignment Papers (cover sheet & document(s))
9. ☐ 37 CFR 3.73(B) Statement (when there is an assignee)
10. ☐ English Translation Document (if applicable)
11. ☐ Information Disclosure Statement/PTO-1449                      ☐ Copies of IDS Citations
12. ☒ Preliminary Amendment
13. ☒ Acknowledgment postcard
14. ☒ Certificate of Mailing

☐ First Class    ☒ Express Mail (Specify Label No.): EL175652105US

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UTILITY PATENT APPLICATION TRANSMITTAL  
(Large Entity)  
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Accompanying Application Parts (Continued)

15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)

16. ☒ Additional Comments (please identify below):

Claim is made under 35 U.S.C. § 119 for the benefit of the filing date of Japanese Patent Application No. 11-255345 filed September 9, 1999 in Japan. A certified copy of the application will be filed in due course.

Fee Calculation and Transmittal

CLAIMS AS FILED

For	#Filed	#Allowed	#Extra	Rate	Fee
Total Claims	14	- 20 =	0	x \$18.00	\$0.00
Indep. Claims	8	- 3 =	5	x \$78.00	\$390.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$0.00
BASIC FEE					\$690.00
OTHER FEE (specify purpose)					\$0.00
TOTAL FILING FEE					\$1,080.00

☒ A check in the amount of \$1,080.00 to cover the filing fee is enclosed.

☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. 18-1644 as described below. A duplicate copy of this sheet is enclosed.

☐ Charge the amount of as filing fee.

☒ Credit any overpayment.

☒ Charge any additional filing fees required under 37 C.F.R. 1.16 and 1.17.

☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

Marylee Jenkins  
Reg. No. 37,645  
Attorney for Applicant  
Filed Under § 1.34 (a)

Signature

Dated: September 8, 2000

CC:

Page 3 of 3

P01ULRG/REV04

PATENT  
B588-012

Express Mail No.: EL 175652105US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Takekazu Kumagai  
Serial No. : Unassigned  
For : APPARATUS WHICH CAN BE CONNECTED TO NETWORK, AND  
CHARGING MANAGEMENT SYSTEM  
Filed : September 8, 2000  
Examiner : Unassigned  
Art Unit : Unassigned

Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

PRELIMINARY AMENDMENT

Please amend the above-identified application as follows prior to examination thereof.

In the Specification

At page 1, line 15, after "users", insert -- , --.

At page 1, line 16, after "apparatus", insert -- , --.

At page 1, line 25, change "one" to -- single --.

At page 4, line 7, change "flow chart" to -- flowchart --.

At page 4, line 19, change "(MultiFunctional" to -- (Multi-Functional --.

At page 5, line 4, change "Note" to -- It should be noted --.

At page 5, line 6, after "and" (second occurrence), insert -- that --.

At page 6, line 6, after "can" , insert -- perform --.

At page 6, line 13, after "controls", insert -- the --.

At page 15, line 3, after "document", insert -- is stored --.

At page 25, line 15, change "flow chart" to -- flowchart --.

At page 27, line 12, change "It" to -- If it --.

At page 28, line 24, change "flow chart" to -- flowchart --.

At page 30, line 6, after "performed", insert -- an --.

At page 30, line 12, after "performed", insert -- an --.

In the Claims

In Claim 9, line 10, change "chare" to -- charge --.

In Claim 13, line 10, change "chare" to -- charge --.

In Claim 14, line 11, change "chare" to -- charge --.

REMARKS

The above amendments to the Specification and the Claims are entered to correct various typographical and grammatical errors therein. Please make these amendments prior to examination of the application.

Dated: September 8, 2000

Respectfully submitted,



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TITLE OF THE INVENTION  
APPARATUS WHICH CAN BE CONNECTED TO NETWORK, AND  
CHARGING MANAGEMENT SYSTEM

5 FIELD OF THE INVENTION

The present invention relates to an apparatus which can be connected to a network, and a charging management system.

10 BACKGROUND OF THE INVENTION

With the widespread use of networks such as LANs in offices, a plurality of users use an apparatus connected to a network. Some apparatuses of this type are designed to store data to be output or input data-in  
15 memory boxes. In such a memory box, users who are permitted to use the apparatus can be set. In addition, a password to gain access to data in the memory box can be set.

Charging management is performed with respect to  
20 data output/input from/to apparatuses connected to a network in units of apparatuses or users.

However, charging is not performed in units of memory boxes for storing data to be output from the apparatuses.

25 If, therefore, a plurality of users use a given one memory box, it is very difficult to calculate a charge

amount for the use of data in the memory box.

#### SUMMARY OF THE INVENTION

It is an object of the present invention to  
5 provide an apparatus which can perform charging  
management in units of memory boxes and can be connected  
to a network, and a charging management system.

According to an embodiment of the present  
invention, there is provided a system including an  
10 apparatus which can be connected to a network and having  
accumulation means for accumulating data, comprising  
accumulation area setting means for setting the  
accumulation means as a plurality of accumulation areas,  
identification information setting means for setting  
15 identification information in each accumulation area set  
by the accumulation area setting means, storage means  
for storing data in the accumulation area on the basis  
of the identification information set by the  
identification information setting means, management  
20 means for managing charge information about the data  
stored by the storage means, and calculation means for  
calculating a charge amount for each identification  
information on the basis of the charge information.

Other features and advantages of the present  
25 invention will be apparent from the following  
description taken in conjunction with the accompanying

drawings, in which like reference characters designate the same or similar parts throughout the figures thereof.

#### BRIEF DESCRIPTION OF THE DRAWINGS

5           Fig. 1 is a block diagram showing the overall arrangement of a network charging management system according to an embodiment of the present invention;

          Fig. 2 is a block diagram showing the overall arrangement of an MFD 1010 in Fig. 1;

10           Figs. 3A to 3C are schematic views showing management records for the memory box function of the MFD 1010 in Fig. 1, in which Fig. 3A is a schematic view showing a management record for one memory box, Fig. 3B is a schematic view showing a management record for  
15 information about one document accumulated in a memory box, and Fig. 3C is a schematic view showing a management record for information about one page of a document accumulated in a memory box;

          Fig. 4 is a schematic view showing information  
20 notified from the MFD 1010 in Fig. 1 to a charging management server 1001 through the network;

          Fig. 5 is a block diagram showing the arrangement of the charging management server 1001 in Fig. 1;

          Fig. 6 is a schematic view showing a charging  
25 management record for each memory box in the charging management server 1001 in Fig. 1;



Fig. 7 is a schematic view showing a charging unit information record in the charging management server 1001 in Fig. 1;

Fig. 8 is a flow chart showing the basic processing for charging management in the charging management server 1001 in Fig. 1; and

Fig. 9 is a flow chart showing the basic processing for charging management in a client 1020 in Fig. 1.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

An embodiment of the present invention will be described below with reference to the accompanying drawings.

Fig. 1 is a block diagram showing the overall arrangement of a network charging management system according to an embodiment of the present invention. Referring to Fig. 1, a charging management server 1001 is connected to a plurality of MFDs (MultiFunctional Devices) 1010 and 1011 and clients 1020 and 1021 serving as service environments for the respective users through a network such as a LAN. The MFDs 1010 and 1011 are connected to a public network to perform facsimile communication.

Each of the MFDs 1010 and 1011 is a composite machine having a plurality of functions, e.g., a copy

function, printer function, and scanner function, as well as the facsimile communication function. The MFDs 1010 and 1011 execute these services in accordance with instructions from the clients 1020 and 1021. Note that

5 MFDs and clients are not limited to the MFDs 1010 and 1011 and clients 1020 and 1021, and many MFDs and clients may be arranged on the LAN.

Fig. 2 is a block diagram showing the overall arrangement of the MFD 1010 in Fig. 1. Note that the

10 MFD 1011 has the same arrangement as that of the MFD 1010, and hence a description thereof will be omitted.

Referring to Fig. 2, a resource management unit 2001 is connected to various resources including an operation unit 2010, a read control unit 2015 connected

15 to a scanner 2016, a printing control unit 2020 connected to a printer 2021, a communication control unit 2025 connected to a line control unit 2026, a memory management unit 2030 connected to a memory 2031, an image processing unit 2035, a coding unit 2040, a PDL

20 control unit 2045 connected to a PDL processing unit 2046, and an external I/F control unit 2050 connected to a LAN control unit 2051. The line control unit 2026 is also connected to an external public network. The LAN control unit 2051 is connected to a LAN. The respective

25 components of the MFD 1010 in Fig. 2 will be sequentially described in detail below.

The resource management unit 2001 manages the overall resources that the unit supports, and performs, for example, scheduling of various jobs requested from the various resources. The operation unit 2010 is a  
5 user interface for providing a user with a function as a terminal. With the operation unit 2010, the user can various operations, e.g., creating a memory box (to be described later), changing/erasing information registered in the memory box, accumulating documents and  
10 images (documents to be described below include images) in the memory box, and printing documents accumulated in the memory box.

The read control unit 2015 controls image read operation of the scanner 2016. The printing control  
15 unit 2020 controls image printing at the printer 2021. The communication control unit 2025 controls normal facsimile transmission/reception through the line control unit 2026. The memory management unit 2030 allocates the resource of the memory 2031 to each  
20 control unit. For example, in facsimile reception operation, memory management unit 2030 manages, for example, the accumulation of a facsimile-received document in a memory box, various data as predetermined use states of the document in facsimile reception  
25 operation, and the use state of each memory box.

The image processing unit 2035 performs image

processing, e.g., changing the size of paper sheet on  
which an image is to be printed, changing the resolution,  
and smoothing processing, and performs image processing  
required for facsimile transmission operation, in  
5 particular. The coding unit 2040 performs a  
predetermined coding/decoding scheme, such as the MH  
scheme, MR scheme, or MMR scheme, which are generally  
used for facsimile transmission/reception. The PDL  
control unit 2045 controls the PDL processing unit 2046  
10 for converting PDL data input through the LAN into video  
data. The video data obtained by the PDL processing  
unit 2046 is generally sent to the printing control unit  
2020 and output from the printer 2021.

The external I/F control unit 2050 performs  
15 control in communicating various data as predetermined  
use states in facsimile reception operation or the like  
with the charging management server 1001 on the LAN,  
which is connected to the external I/F control unit 2050  
through the LAN control unit 2051, and also manages the  
20 corresponding jobs. For example, the external I/F  
control unit 2050 controls reception of print jobs and  
the like transmitted from the clients 1020 and 1021,  
facsimile reception, and transfer of various data as  
predetermined use states in data read operation of the  
25 scanner 2016 to the charging management server 1001. In  
addition, the external I/F control unit 2050 notifies

the charging management server 1001 of the results of executed jobs.

The facsimile memory box function of the MFD 1010 will be described next. This memory box is a  
5 predetermined storage area set in the memory 2031, has unique identification information, and stores data subjected to processing, such as output processing and input processing performed by the MFD 1010. For example, in facsimile reception operation, a facsimile-received  
10 document is stored in a memory box having identification information corresponding to identification information acquired in the facsimile reception operation.

The memory box function includes memory box creation processing, accumulation processing for a  
15 facsimile-received document or a document read by the scanner into the memory box, print output processing of a document accumulated in the memory box, facsimile transmission processing, and the like.

In the memory box creation processing, a memory  
20 box creation window is displayed in accordance with operation with the operation unit 2010, and a memory box is created. At this time, the holder of the memory box, SUB, SEP and PWD recommended by ITU-T.30, a password for printing the received document, a transfer destination,  
25 and the like can be registered in the memory box.

In document accumulation processing with respect

to the memory box, the resource management unit 2001  
controls each associated control unit, an operator  
(user) is specified in accordance with operation with  
the operation unit 2010, and the document data of an  
5 original that is read by the scanner 2016 is accumulated  
in the memory box designated by the operator. In  
addition, in this processing, a received document is  
also accumulated in a memory box corresponding to the  
identification information acquired in facsimile  
10 reception operation.

In print output processing for a document stored  
in a memory box, the resource management unit 2001  
controls each associated control unit to print out a  
document, which is accumulated in the memory box in the  
15 document accumulation processing with respect to the  
memory box, from the printer 2021.

In facsimile transmission processing for a  
document accumulated in a memory box, the resource  
management unit 2001 controls each associated control  
20 unit, and a document in the memory box designated by  
operation with the operation unit 2010 is transmitted  
from the line control unit 2026 to a transfer  
destination through a public network.

Note that various data as predetermined use states  
25 are transferred to the charging management server 1001  
through the LAN control unit 2051 in correspondence with

the document accumulation processing with respect to the  
memory box, memory box accumulated document output  
processing, facsimile transmission of the document  
accumulated in the memory box, and facsimile reception  
5 processing.

According to the above description, each process  
based on the memory box function is performed in  
accordance with operation with the operation unit 2010.  
Obviously, however, these processes may be performed in  
10 accordance with the operations of the clients 1020 and  
1021 connected to a network such as a LAN.

Management records in the memory box function of  
the facsimile will be described next with reference to  
Figs. 3A to 3C. Figs. 3A to 3C are schematic views  
15 showing management records in the memory box function of  
the MFD 1010. Fig. 3A is a schematic view showing a  
management record in one memory box. Fig. 3B is a  
schematic view showing a management record of  
information associated with one document accumulated in  
20 the memory box. Fig. 3C is a schematic view showing a  
management record of information associated with one  
page of the document accumulated in the memory box.

Referring to Fig. 3A, in a memory box number 2101,  
a memory box number identifying a memory box to be  
25 managed is stored. A user 2102 is a portion in which  
the user identification information of a memory box is

stored. In this portion, the user number is stored. If  
a plurality of users use the memory box, a plurality of  
user numbers are stored. SEP/SUB 2103 is identification  
information used in facsimile reception operation. In  
5 this portion, string data stored in a SEP/SUB frame  
defined by ITU-T.30 recommendation is stored. PWD 2104  
is identification information used in facsimile  
reception operation. In this portion, string data  
stored in a PWD frame defined by ITU-T.30 recommendation  
10 is stored.

In this embodiment, when SUB and PWD frames are  
received from a transmitting station in facsimile  
reception operation, they are collated with the SUB and  
PWD frames registered in the SEP/SUB 2103 and PWD 2104  
15 in each memory box. If SUB and PWD frames identical to  
the received SUB and PWD frames are registered in the  
SEP/SUB 2103 and PWD 2104 as a result of collation, the  
received facsimile document is stored in the  
corresponding memory box. If no identical SUB and PWD  
20 frames are present, the line is disconnected.

In an accumulated document queue 2105, the  
management data address of the first document of a  
plurality of documents accumulated in the memory box is  
stored. In an accumulated document count 2106, the  
25 number of documents accumulated in the memory box is  
stored.





is stored. In the document print password 2111, a password for printing a received document or document accumulated in a memory box in document accumulation processing is stored. This password is used for the  
5 collation of passwords when the user tries to print the document accumulated in the memory box.

Referring to Fig. 3B, a document number 2201 is a portion in which a document number is stored. In a next document address 2202, an address indicating the next  
10 document management record is stored. In a first page address 2203, a pointer indicating the data of the first page of a document is stored. In a document page count 2204, the number of pages of this document is stored. In a document creation time 2205, the time at which this  
15 document was created is stored.

Referring to Fig. 3C, a page number in a document is stored in a page number 2301. In a next page address 2302, the address of the next page record is stored. In a data size 2303, the size of actual data is stored. In  
20 an image size 2304, the paper size (A4, B4, or the like) of the image of the actual data is stored. In a resolution 2305, the resolution of the image of the actual data is stored. In an actual data storage address 2306, the first address of the memory 2031 in  
25 which the actual data is stored is stored.

As described above, since the MFD 1010 has the

memory box function of managing accumulation of data,  
e.g., a facsimile-received document, in a memory box and  
a predetermined use state of each memory box, the use  
state of the MFD 1010 in units of memory boxes can be  
5 easily checked.

In addition, setting a password for each memory  
box can prevent the document data stored in a memory box  
from being output to an unauthorized user.

Pieces of information that are notified from the  
10 MFD 1010 or 1011 to the charging management server 1001  
through the network when processing associated with the  
memory box function of the MFD 1010 or 1011 in Fig. 1 is  
performed will be described next with reference to  
Fig. 4. Fig. 4 is a schematic view showing pieces of  
15 information that are informed from the MFD 1010 or 1011  
to the charging management server 1001 through the  
network.

Note that the configuration of data notified from  
the MFD 1010 is identical to that from the MFD 1011, and  
20 hence the MFD 1010 will be exemplified.

Referring to Fig. 4, in a job type 2401, the type  
of job processed in the MFD 1010 is stored. The job  
types include "scan accumulation", "reception",  
"transmission", "polling transmission", "transfer",  
25 "accumulated document print", and the like. In a result  
2402, the processing result is stored. In a memory box

number 2403, the number of the memory box subjected to processing is stored. In a copy count 2404, the number of copies of a processed accumulated document. If, for example, two copies are designated and printing is performed in printing an accumulated document, "2" is stored. In a page count 2405, the number of pages of an accumulated document having undergone processing is stored. In a job start time 2406, the time at which processing for a job started is stored. In a job end time 2407, the time at which processing for a job ended is stored.

A communication job information 2408, communication partner name 2409, communication partner number 2410, used line 2411, and communication speed 2412 are portions that are used when a job is communicated (reception, transmission, polling transmission, transfer, or the like). In the communication job information 2408, "1" is stored when the information of a communicated job is stored, and "0" is stored when the information is not stored. In the communication partner name 2409, the name of a communication partner which the MFD 1010 communicated is stored. In the communication partner number 2410, the subscriber number of a communication partner is stored. In the communication speed 2412, the communication speed at which communication was performed is stored.

Print job information 2413, print resolution 2414, used cassette 2415, color/monochrome 2416, and finishing 2417 are portions used when printing is done in a job. In the print job information 2413, information

5 indicating whether information about a print job is stored is stored. If information about a print job is stored, "1" is stored. Otherwise, "0" is stored. In the print resolution 2414, the resolution of a print in the execution of a print job is stored. In the used

10 cassette 2415, the number of the cassette that is used when the print job is executed is stored. In the color/monochrome 2416, information indicating whether the ink/toner used for printing is color or monochrome is stored. In the finishing 2417, information about

15 processing such as stapling or punching to be performed after the print operation is stored.

Scan job information 2418, color/monochrome 2419, image size 2420, and resolution 2421 are portions used when the type of job is scan accumulation. In the scan

20 job information 2418, information indicating whether scan job information is stored is stored. If scan job information is stored, "1" is stored. Otherwise, "0" is stored. In the color/monochrome 2419, information indicating whether color scanning or monochrome scanning

25 was performed in scan accumulation is stored. In the image size 2420, the paper size (A4, B4, or the like) of

a scanned image is stored. In the resolution 2421, the resolution set in the scan operation is stored.

In a user number 2422, a number for identifying the user who executed a job is stored. Although not  
5 shown, information about each job includes MFD identification information for identifying each MFD is also stored.

As described above, since the MFD 1010 or 1011 notifies the charging management server 1001 of the use  
10 state through the LAN, the charging management server 1001 can easily manage the use state of the MFD 1010 or 1011.

The charging management server 1001 in Fig. 1 will be described next with reference to Fig. 5. Fig. 5 is a  
15 block diagram showing the arrangement of the charging management server 1001.

As shown in Fig. 5, a LAN control unit 3001 connected to an external LAN, transaction management unit 3002, request queue management unit 3003, and  
20 device management unit 3004 are connected in series. A user management unit 3005, server management unit 3006, and charging management unit 3007 are connected in parallel with the transaction management unit 3002 and device management unit 3004. The user management unit  
25 3005, server management unit 3006, and charging management unit 3007 are further connected to the memory

management unit 3030. The charging management unit 3007 is connected to each charging job group 3020 through a scheduler 3010. The scheduler 3010 is connected to a memory management unit 3030. The memory management unit 5 3030 is further connected to a database 3031.

The LAN control unit 3001 has the basic function provided by a network OS in which a server application is installed. The transaction management unit 3002 individually performs communication processing with the 10 MFDs 1010 and 1011 and clients 1020 and 1021, managed by the charging management server 1001, through the LAN control unit 3001 in consideration of the internal processing result. The request queue management unit 3003 basically manages various request messages 15 asynchronously transferred from the MFDs 1010 and 1011 and clients 1020 and 1021 by temporarily queuing them, and sequentially performs processing corresponding to the request contents. It is also assumed that a request that demands scheduling in the charging management 20 server 1001 is generated.

The device management unit 3004 sends messages including request contents from the MFDs 1010 and 1011 and clients 1020 and 1021, and also from charging management server 1001 in some cases, to the user 25 management unit 3005, server management unit 3006, and charging management unit 3007. The user management unit

3005 processes a job associated with user management,  
and basically processes jobs associated with the  
management of the clients 1020 and 1021 (users) and MFDs  
1010 and 1011. For example, the user management unit  
5 3005 manages and controls determination on connection  
(login) request processing from the clients 1020 and  
1021 and MFDs 1010 and 1011, handling of charging  
information managed by the respective users, the job  
processing states in the MFDs 1010 and 1011, and the  
10 resource state.

The server management unit 3006 processes a job  
associated with server management, and is basically  
provided with service functions such as a server setting  
function for a person in charge of the charging  
15 management server 1001, data backup function, and  
service log data acquisition function.

The charging management unit 3007 performs  
processing associated with overall charging management  
in the server. In addition, the charging management  
20 unit 3007 transfers control to the scheduler 3010 as  
needed to execute processing of each charging job group  
3020 under the control of the scheduler 3010. The  
memory management unit 3030 accumulates and manages  
various data in the database 3031, which are processed  
25 by the charging management server 1001 under the control  
of the memory management unit 3030, and refers to and



reads out the data, as needed.

Fig. 6 is a schematic view showing a charging management record in each memory box in the charging management server 1001 in Fig. 1. This charging management record is created and managed in units of memory boxes, and is updated every time a job result notification from the MFD 1010 or 1011 to a memory box is received. The charge amount in each memory box is calculated on the basis of this charging management record and the charging unit information record shown in Fig. 7.

Referring to Fig. 6, a user number 3101 is a portion in which a number for identifying a user is stored. In a memory box number 3102, the memory box number 2101 in Fig. 3 is stored. In memory box use 3103, information indicating whether the memory box is used or not is stored. In a print count 3104, the number of times the document in the memory box is printed is stored.

In a print page count 3105, the cumulative number of pages printed out is stored. In a monochrome print page count 3106, color print page count 3107, and stapled copy count 3108, the number of monochrome print pages, the number of color print pages, and the number of stapled copies are respectively stored. In a FAX transmission count 3110, the cumulative number of times

facsimile transmission performed in a memory box is stored. Facsimile transmission performed in the memory box includes polling transmission based on SEP/PWD and transmission by transfer. In a transfer destination  
5 name 3111, a transfer destination name is stored. In a transfer destination number 3112, a transfer destination number is stored. In a transfer count 3113, the number of times of transfer is stored. In a transfer page count 3114, the number of pages transferred is stored.

10 A destination 1 name 3120, number 3121, transmission count 3122, and transmission page count 3123 are portions for managing information about polling transmission performed in the memory box in units of destinations. Areas corresponding to the number of  
15 destinations are ensured. Fig. 6 shows a case wherein pieces of information corresponding to two destinations are stored. In the destination 1 name 3120, a destination name is stored. In the number 3121, the subscriber number of the destination is stored. In the  
20 transmission count 3122, the number of times of transmission to the destination is stored. In the transmission page count 3123, the number of pages transmitted is stored.

In a FAX reception count 3131, the cumulative  
25 number of times of facsimile reception performed in a memory box is stored. A partner 1 name 3132, number

3133, reception count 3134, and reception page count 3135 are portions in which pieces of reception information in the memory box are stored. Areas corresponding to the number of partners are ensured.

5 Fig. 6 shows a case wherein pieces of information corresponding to two partners are stored. In the partner 1 name 3132, a destination name is stored. In the number 3133, the subscriber number of the partner is stored. In the reception count 3134, the number of  
10 times of reception is stored. In the reception page count 3135, the number of pages received is stored.

In a scan count 3136, the number of times document accumulation processing was performed with respect to a memory box, i.e., the number of times image data such as  
15 a document was accumulated in the memory box by reading an original set on the scanner 2016, is stored. In a monochrome scan count 3137 and color scan count 3138, the numbers of times scanning was performed by the monochrome function and color function are respectively  
20 stored. In a scan image size 3139, the size of image data such as a document accumulated in the memory box is stored. Note that this embodiment may further include areas for storing pieces of information, such as the resolution set in scan operation, the scan image size in  
25 each of the color and monochrome modes, and the paper size of image data.

Charging management and calculation of charging information in the charging management server 1001 will be described next with reference to Fig. 7. Fig. 7 is a schematic view showing a charging unit information record in the charging management server 1001 in Fig. 1.

Charging unit information record needs to be registered by the user in advance. This information is created by each device (MFD 1010 or 1011) and managed by the charging management server 1001. This information is used to calculate a charge amount (charging information) for each job. A charge amount is calculated by adding extra charges to a basic charge 3201. For extra charges, a used cassette 3210, used color 3220, and used finisher 3230 are set. In the used cassette 3210, the charging information of the cassette used in print operation is stored. For example, a cassette A 3011 and cassette B 3012 are set for the respective types of cassettes, and the corresponding charging units are respectively stored. In the used color 3220, the charging information about the ink or toner used in print operation is stored. For example, monochrome 3221 and color 3222 are set for the respective types of ink, and the corresponding charging units are respectively stored. In the used finisher 3230, the charging information about the finisher used in print output operation is stored. For example,

charging units are respectively stored in a staple 3231 and punch 3232.

When document accumulation processing is performed with respect to a memory box, a used scanner 3233, used scanner color 3236, scan original size 3242, and scan data size 3246 are set as extra features. In the used scanner 3233, the charging information about the scanner used to scan an original is stored. For example, a scanner A 3234 and scanner B 3235 are set, in each of which charging information is stored. In the used scanner color 3236, the charging information about the color function used to scan the original is stored. For example, color 3237 and monochrome 3238 are set, in each of which charging information is stored. In an operating resolution 3239, the charging information about the resolution with which the original is scanned is stored. For example, 600 dpi 3240 and 1,200 dpi 3241 is set, in each of which charging information is stored. In a scan original size 3242, the charging information about the paper size of the scanned original is stored. For example, B5 (3243), A4 (3244), and A3(3245) are set, in each of which charging information is stored. In a scan data size 3246, the charging information about the data size of the scanned original is stored. For example, 50 Mbytes 3247 and 100 Mbytes 3248 are set, in each of which charging information is stored.

Although not shown, the charge for a line in facsimile transmission may be managed in units of memory boxes.

As described above, the charging management server 1001 manages the use states including memory box information which are acquired from the MFDs 1010 and 1011, and also manages the charging unit information about each job in each of the MFDs 1010 and 1011, thereby calculating the charging information of an executed job on the basis of the acquired use states and charging unit information. This makes it possible to perform charging management for each memory box.

Basic processing for charging management in the charging management server 1001 will be described next with reference to Fig. 8. Fig. 8 is a flow chart showing the basic processing for charging management in the charging management server 1001.

Referring to Fig. 8, in step S3301, the database is checked when the power supply is turned on. It is then checked whether a login request is sent from the client 1020 or 1021 or the MFD 1010 or 1011 to the charging management server 1001 (step S3310). If it is determined that a login request is generated, the charging management server 1001 performs login processing including a password check and the like (step S3311). This processing is performed in the user

management unit 3005 in Fig. 5.

If it is determined in step S3310 that no login request is generated, the flow advances to step S3315 to check whether a user information request is sent from  
5 the client 1020 or 1021. If it is determined that a user information request is generated, the charging management server 1001 performs processing (user information request processing) of transferring individual data of each user and common data to the  
10 client 1020 or 1021 on the basis of the contents of the user information request (step S3316). This processing is performed in the user management unit 3005 in Fig. 5.

It is determined in step S3315 that no user information request is sent from either of the clients  
15 1020 and 1021, the flow advances to step S3320 to check whether a server information request is sent from either of the clients 1020 and 1021. It is determined that a server information request is generated, the charging management server 1001 performs processing (server  
20 information request processing) of transferring data unique to the server to the client 1020 or 1021 on the basis of the contents of the server information request (step S3321). This processing is performed in the server management unit 3006 in Fig. 5.

25 If it is determined in step S3320 that no server information request is sent from either of the clients

1020 and 1021, the flow advances to step S3325 to check whether a request for charging data of each memory box is sent from either of the clients 1020 and 1021. If it is determined that a charging data request is generated,  
5 the charging management server 1001 performs data transfer processing for designated charging data (charging data request processing) (step S3326). This processing is performed in the charging management unit 3007 in Fig. 5. Note that the charging management  
10 server 1001 may transfer charging data in units of users or apparatuses as well as in units of memory boxes.

It is determined in step S3325 that no charging data request is sent from either of the clients 1020 and 1021, the flow advances to step S3330 to check whether a  
15 request to create a charging unit record is sent from either of the clients 1020 and 1021. If it is determined that a request to create a charging unit record is sent, the charging management server 1001 creates/changes (charging unit record creation  
20 processing) a charging unit record in accordance with the type of device designated (MFDs 1010 or 1011) (step S3331).

If it is determined in step S3330 that no request to create a charging unit record is sent from either of  
25 the clients 1020 and 1021, the flow advances to step S3335 to check whether a processing request associated



with job data notification processing is sent from  
either of the MFDs 1010 and 1011. If it is determined  
that a processing request associated with job data  
notification is generated, the charging management  
5 server 1001 updates the charging management record on  
the basis of the job data, and performs processing (job  
data request processing) of the job charging management  
record in the memory box (step S3336).

If it is determined in step S3335 that no request  
10 associated with job data processing is sent from either  
of the MFDs 1010 and 1011, the flow advances to step  
S3340 to check whether a logout request is generated.  
If it is determined that a logout request is generated,  
logout processing is performed (step S3341).

15 If it is determined in step S3340 that no logout  
request is generated, the flow advances to step S3345 to  
check whether a server shutdown request is generated.  
If it is determined that a server shutdown request is  
generated, server shutdown processing is performed (step  
20 S3346), and this processing is terminated.

If it is determined in step S3345 that no server  
shutdown request is generated, the flow returns to step  
S3310 to repeat processing from step S3310.

Fig. 9 is a flow chart showing the basic  
25 processing of charging management in the clients 1020  
and 1021 in Fig. 1. Referring to Fig. 9, in step S4101,

connection processing, login operation, and the like are performed for the charging management server 1001. Data is then acquired from the charging management server 1001 (data upload) and displayed on the screen (step S4102).

In step S4110, it is checked whether a charging information acquisition request is generated by the operation performed by a user. If it is determined that a charging information acquisition request is generated by the operation performed by a user, the charging management server 1001 is inquired of charging data of the memory box, which the user wants to acquire, thus acquiring the result and displaying it (charging information acquisition processing) (step S4111). With this operation, the user can designate a memory box and acquire charging information of each memory box. This apparatus is also configured to acquire charging information and the like in units of users and devices.

If it is determined in step S4110 that no charging information acquisition request is generated by the operation performed by a user, the flow advances to step S4120 to check whether a charging unit record creation request is generated by the operation performed by a user. If it is determined that a charging unit record creation request is generated by the operation performed by a user, a unit record is generated and registered in

the charging management server 1001 (charging unit  
record creation processing) (step S4121).

If it is determined in step S4120 that no charging  
unit record creation request is generated by the  
5 operation performed by a user, the flow advances to step  
S4130 to check whether a user has performed operation to  
terminate a client application. If it is determined  
that a user has performed the operation, disconnection  
processing (step S4131) is performed to terminate this  
10 processing.

If it is determined in step S4130 that a user has  
not performed operation to terminate the client  
application, the flow returns to step S4102 to repeat  
the above processing from step S4102.

15 Note that a multifunctional device may be used in  
place of a server to manage data about use states and  
charging unit information about each job, and charging  
information about each job may be calculated on the  
basis of the corresponding use state and charging unit  
20 information.

According to this embodiment, the apparatus having  
the memory box function transmits the use state of data  
accumulated in each memory box to the information  
processing apparatus for managing charging unit  
25 information about the use of the data. This makes it  
possible to calculate a charge for the use of data in

units of memory boxes.

In addition, if another information processing apparatus is connected to the information processing apparatus for managing charging unit information, the  
5 connected apparatus can check a calculated charge.

Furthermore, setting of a password for each memory box can prevent document data stored in each memory box from being output to an unauthorized user, thus preventing charging for the output.

10 Note that the present invention may be applied to either a system constituted by a plurality of devices (e.g., a host computer, an interface device, a reader, a printer, and the like), or an apparatus consisting of a single device (e.g., a copying machine, a  
15 facsimile apparatus, or the like).

The present invention is not limited to a LAN and can also be applied to an external network such as the Internet.

The objects of the present invention are also  
20 achieved by supplying a storage medium, which records a program code of a software program that can realize the functions of the above embodiment to the system or apparatus, and reading out and executing the program code stored in the storage medium by a computer (or a CPU or  
25 MPU) of the system or apparatus.

In this case, the program code itself read out from

the storage medium realizes the functions of the above embodiment, and the storage medium which stores the program code constitutes the present invention.

As the storage medium for supplying the program  
5 code, for example, a floppy disk, hard disk, optical disk, magneto-optical disk, CD-ROM, CD-R, magnetic tape, nonvolatile memory card, ROM, and the like may be used.

The functions of the above embodiment may be realized not only by executing the readout program code  
10 by the computer but also by some or all of actual processing operations executed by an OS (operating system) running on the computer on the basis of an instruction of the program code.

Furthermore, the functions of the above-mentioned  
15 embodiments may be realized by some or all of actual processing operations executed by a CPU or the like arranged in a function extension board or a function extension unit, which is inserted in or connected to the computer, after the program code read out from the  
20 storage medium is written in a memory of the extension board or unit.

As many apparently widely different embodiments of the present invention can be made without departing from the spirit and scope thereof, it is to be understood that  
25 the invention is not limited to the specific embodiments thereof except as defined in the appended claims.

WHAT IS CLAIMED IS:

1. A system including an apparatus which can be connected to a network and having accumulation means for accumulating data, comprising:

5 accumulation area setting means for setting said accumulation means as a plurality of accumulation areas; identification information setting means for setting identification information in each accumulation area set by said accumulation area setting means;

10 storage means for storing data in the accumulation area on the basis of the identification information set by said identification information setting means;

management means for managing charge information about the data stored by said storage means; and

15 calculation means for calculating a charge amount for each identification information on the basis of the charge information.

2. The system according to claim 1, wherein the charge information managed by said management means  
20 includes information for charging for input, storage, and output of the data.

3. The system according to claim 1, wherein the accumulation area can be used by a plurality of users.

4. The system according to claim 1, further  
25 comprising password setting means for setting a password for processing data stored in each accumulation area for

each accumulation area.

5. An apparatus which can be connected to a network,  
comprising:

accumulation means for accumulating data;

5 accumulation area setting means for setting said  
accumulation means as a plurality of accumulation areas;

identification information setting means for  
setting identification information for each accumulation  
area set by said accumulation area setting means;

10 storage means for storing data in the accumulation  
area on the basis of the identification information set  
by said identification information setting means; and

creation means for creating information for  
charging in each of the accumulation areas.

15 6. The apparatus according to claim 5, further  
comprising:

management means for managing charge information  
about the data stored by said storage means; and

20 calculation means for calculating a charge amount  
for the data for each identification information, set by  
said identification information setting means, on the  
basis of the charge information managed by said  
management means and the information created by said  
creation means.

25 7. The apparatus according to claim 5, wherein the  
accumulation area can be used by a plurality of users.

8. The apparatus according to claim 5, further comprising password setting means for setting a password for processing data stored in each accumulation area for each accumulation area.

5 9. An information processing apparatus which can be connected through a network to an apparatus in which accumulation means is divided into a plurality of accumulation areas and data is stored in each of the accumulation areas, comprising:

10 acquisition means for acquiring information about data stored in each of the accumulation areas;

management means for managing charge information about the information; and

15 calculation means for calculating a charge amount in each of the accumulation areas on the basis of the information acquired by said acquisition means and the charge information managed by said management means.

10. A control method of controlling a system including an apparatus which can be connected to a network and  
20 having accumulation means for accumulating data, comprising:

an accumulation area setting step of setting said accumulation means as a plurality of accumulation areas;

25 an identification information setting step of setting identification information in each accumulation area set in said accumulation area setting step;



a storage step of storing data in the accumulation area on the basis of the identification information set in said identification information setting step;

a management step of managing charge information  
5 about the data stored in the storage step; and

a calculation step of calculating a charge amount for each identification information on the basis of the charge information.

11. A control method of controlling an apparatus which  
10 can be connected to a network, comprising:

an accumulation area setting step of setting a plurality of accumulation areas for accumulating data;

an identification information setting step of setting identification information for each accumulation.  
15 area set in said accumulation area setting step;

a storage step of storing data in the accumulation area on the basis of the identification information set in said identification information setting step; and

a creation step of creating information for  
20 charging in each of the accumulation areas.

12. A storage medium storing a program for controlling an apparatus which can be connected to a network, the program executing:

an accumulation area setting step of setting a  
25 plurality of accumulation areas for accumulating data;

an identification information setting step of

setting identification information for each accumulation  
area set in said accumulation area setting step;

a storage step of storing data in the accumulation  
area on the basis of the identification information set  
5 in said identification information setting step; and

a creation step of creating information for  
charging in each of the accumulation areas.

13. A control method of controlling an information  
processing apparatus which can be connected through a  
10 network to an apparatus in which accumulation means is  
divided into a plurality of accumulation areas and data  
is stored in each of the accumulation areas, comprising:

an acquisition step of acquiring information about  
data stored in each of the accumulation areas;

15 a management step of managing charge information  
about the information; and

a calculation step of calculating a charge amount  
in each of the accumulation areas on the basis of the  
information acquired in said acquisition step and the  
20 charge information managed in said management step.

14. A storage medium storing a program for controlling  
an information processing apparatus which can be  
connected through a network to an apparatus in which  
accumulation means is divided into a plurality of  
25 accumulation areas and data is stored in each of the  
accumulation areas, the program executing:

an acquisition step of acquiring information about data stored in each of the accumulation areas;

a management step of managing charge information about the information; and

- 5 a calculation step of calculating a charge amount in each of the accumulation areas on the basis of the information acquired in said acquisition step and the charge information managed in said management step.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	

5 information about the use of data. This makes it possible to calculate charges for the use of data in units of memory boxes.

FIG. 1

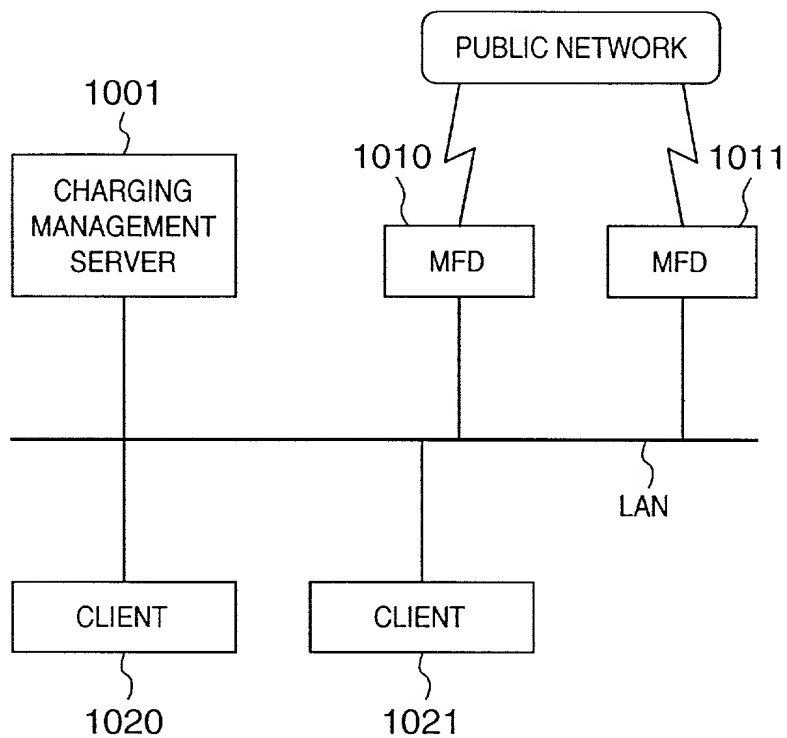
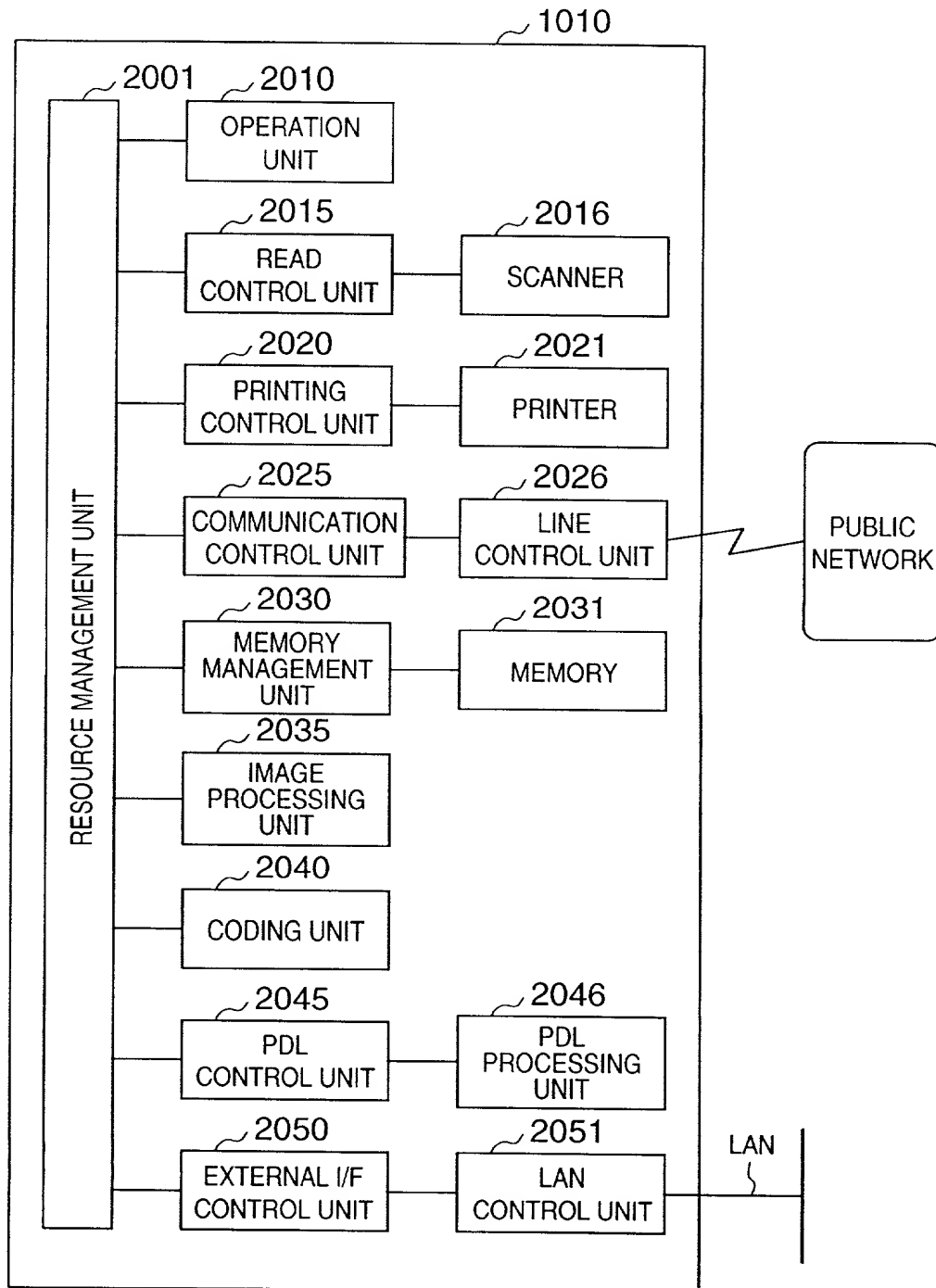


FIG. 2



**FIG. 3A**

MEMORY BOX NUMBER	2101
USER	2102
SEP / SUB	2103
PWD	2104
ACCUMULATED DOCUMENT QUEUE	2105
ACCUMULATED DOCUMENT COUNT	2106
DOCUMENT TRANSFER SETTING	2107
DOCUMENT TRANSFER DESTINATION	2108
DOCUMENT TRANSFER START TIME	2109
DOCUMENT RECEPTION SETTING	2110
DOCUMENT PRINT PASSWORD	2111

**FIG. 3B**

DOCUMENT NUMBER	2201
NEXT DOCUMENT ADDRESS	2202
FIRST PAGE ADDRESS	2203
DOCUMENT PAGE COUNT	2204
DOCUMENT CREATION TIME	2205

**FIG. 3C**

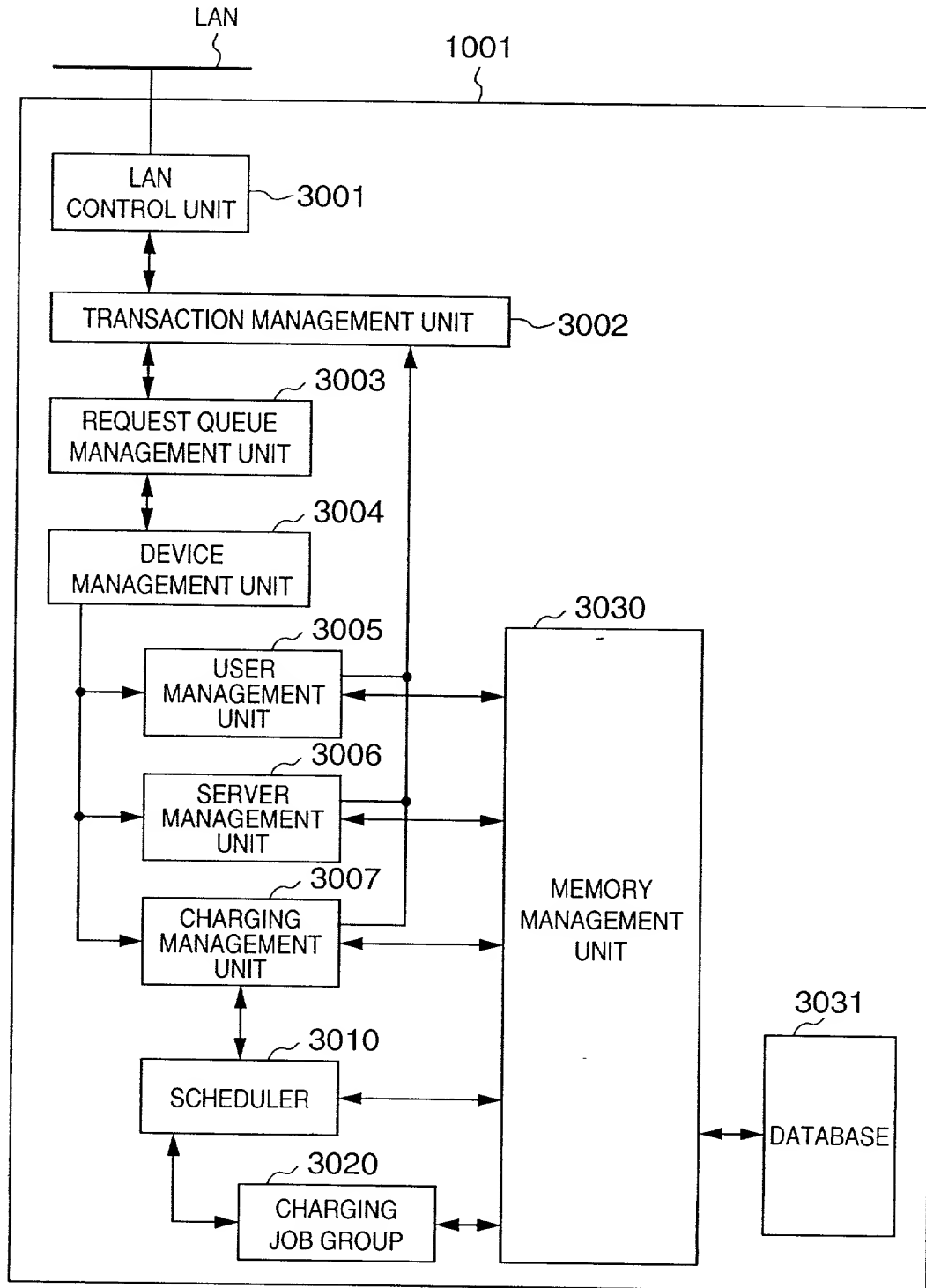
PAGE NUMBER	2301
NEXT PAGE ADDRESS	2302
DATA SIZE	2303
IMAGE SIZE	2304
RESOLUTION	2305
ACTUAL DATA STORAGE ADDRESS	2306

# FIG. 4

JOB TYPE	2401
RESULT	2402
MEMORY BOX NUMBER	2403
COPY COUNT	2404
PAGE COUNT	2405
JOB START TIME	2406
JOB END TIME	2407
COMMUNICATION JOB INFORMATION	2408
COMMUNICATION PARTNER NAME	2409
COMMUNICATION PARTNER NUMBER	2410
USED LINE	2411
COMMUNICATION SPEED	2412
PRINT JOB INFORMATION	2413
PRINT RESOLUTION	2414
USED CASSETTE	2415
COLOR / MONOCHROME	2416
FINISHING	2417
SCAN JOB INFORMATION	2418
COLOR / MONOCHROME	2419
IMAGE SIZE	2420
RESOLUTION	2421
USER NUMBER	2422



FIG. 5







# FIG. 8

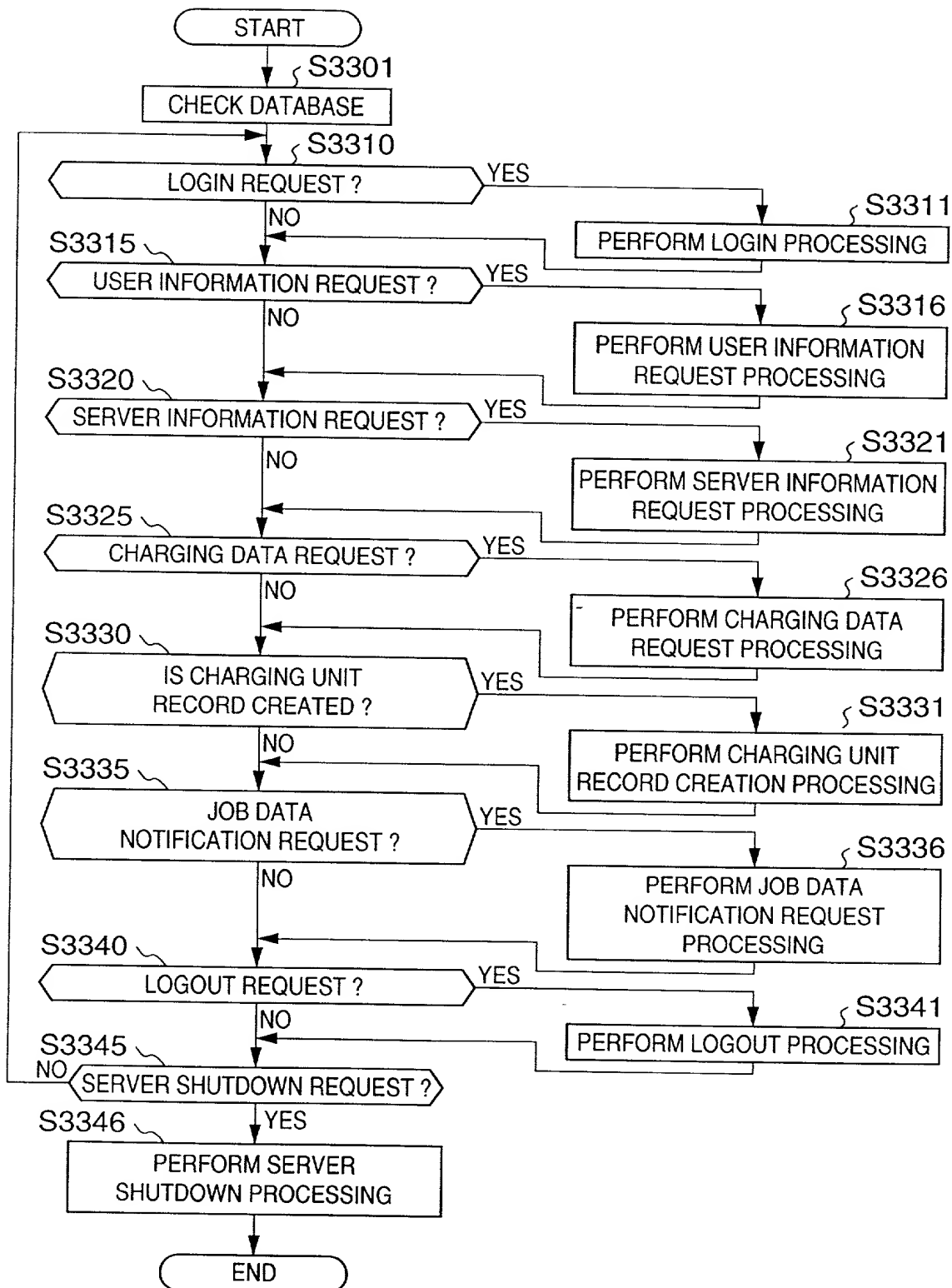
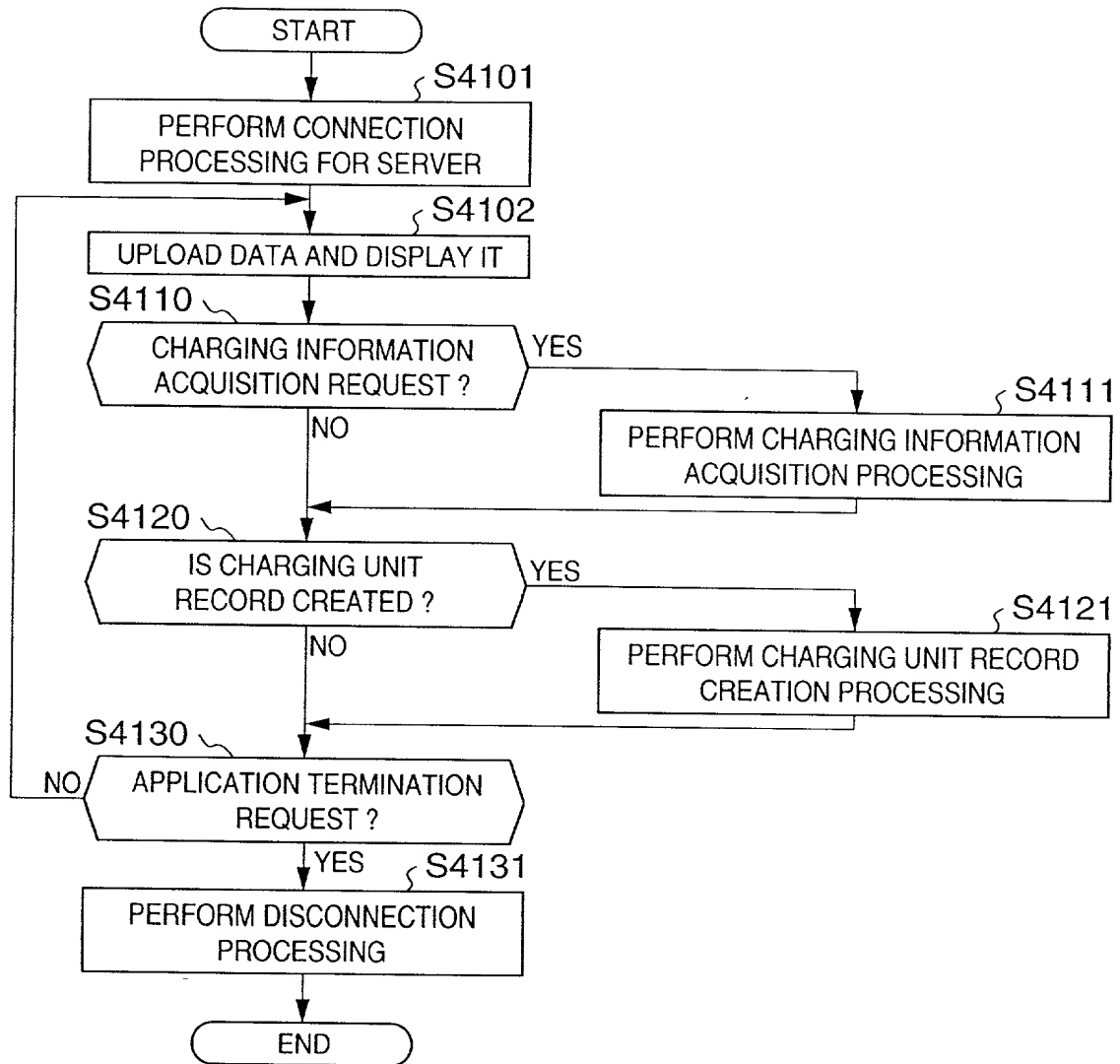


FIG. 9



COMBINED DECLARATION AND POWER OF  
ATTORNEY FOR PATENT APPLICATIONATTORNEY DOCKET:  
NO. B588-012

As the below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

APPARATUS WHICH CAN BE CONNECTED TO NETWORK,  
AND CHARGING MANAGEMENT SYSTEM

the specification of which (check one)

☒

is attached hereto.

was filed on \_\_\_\_\_, as application Serial No. \_\_\_\_\_ and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of the application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Section 119 of Title 35, United States Code, of any foreign application(s) for patent or inventor's certificate(s) listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application(s) or inventor's certificate(s) on which priority is claimed:

PRIOR FOREIGN APPLICATIONS		Filing Date day/mo/yr	Priority Claimed Under 35 USC 119	
COUNTRY	SERIAL NO.		Yes	No
JAPAN	11-255345	09/09/1999	X	

CFM200025  
P200-0-1401

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

APPLICATION SERIAL NO.	FILING DATE day/mo/yr	STATUS Patented, Pending, Aband.

I hereby appoint James J. Daley, Registration No. 24,158, Herbert Blecker, Registration No. 20,368, John J. Torrente, Registration No. 26,359, Marylee Jenkins, Registration No. 37,645 and Michael Schwarz, Registration No. 33,060 as my attorneys to prosecute this application and transact all business in the Patent and Trademark Office connected herewith.

Please address all correspondence to James J. Daley at Robin, Blecker, Daley & Driscoll, 330 Madison Avenue, New York, New York 10017. Please direct telephone calls to (212) 682-9640.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

<b>Full Name of Sole or First Joint Inventor</b>  Takekazu KUMAGAI	<b>Inventor's Signature</b>  <i>Takekazu Kumagai</i>	<b>Date</b>  <i>August 29, 2000</i>
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